

Teacher's Guide

Scientists around the world have made detailed observations of the impacts that climate change has already made on ecosystems. It is difficult to make future projections based on these observations because of the complexities involved in human/nature interactions (e.g., land use change). Nevertheless, the observed changes are compelling examples of how rising temperatures can affect the natural world and raise questions of how vulnerable species will adapt to direct and indirect effects associated with climate change. The knowledge we gain from these observations also gives us insight as to how we as humans may be able to help species adapt. Thus, this kit has been developed through the cooperation of staff from eight federal agencies: U.S. Environmental Protection Agency, National Park Service, U.S. Fish and Wildlife Service, National Oceanic and Atmospheric Administration, National Aeronautics and Space Administration, Forest Service of the U.S. Department of Agriculture, Bureau of Land Management, and the U.S. Geological Survey.

Purpose

The purpose of the *Climate Change, Wildlife and Wildlands Toolkit for Formal and Informal Educators*

and refuge interpreters, zoo and aquarium educators, science museum docents, etc.) with the tools to educate middle school students about the science of climate change, its impacts on U.S. wildlife and wildlands, and what kids can do to help address the issue.

Contents

The contents of the *new* 2008 version of the

will be posted online on the EPA climate change website as the various pieces of it are finalized. The contents currently available online include:

- **Back to Basics**
Asked Questions" format.
- **Case studies** -regions in the U.S. Topics in the case studies include regional impacts of climate change, "Spotlight on Species" on public lands that are being affected by climate change, and strategies being employed by "Climate Stewards" in each region who are helping ecosystems adapt to a changing world. The five eco-regions are:
 - Western mountains and forests
 - Eastern coastlines
 - Caribbean islands
 - Eastern forests and woodlands
 - Polar-subpolar (Alaska)
- **Activities for students**

- **Climate Literacy guidelines**
- **Glossary**
- **Global Warming Wheel**
- **Card**
- **Poster titled “How Do You Measure Up?”** illustrating the importance of setting goals to reduce greenhouse gas emissions in households, schools, communities, etc., by first taking an inventory of one’s present emissions.

Availability

The entire toolkit will be available on DVD **FREE** for educators after February 1, 2009, through the National Service Center for Environmental Publications, 1-800-490-9198, <http://www.epa.gov/nscep/>. When it’s available, the complete toolkit will include:

- *Back to Basics*, the science of global warming/climate change in a “Frequently Asked Questions” format.
- Map of U.S. with overlays of public lands areas and the 11 U.S. eco-regions identified in the kit. The eco-regions are:
 - Western mountains and forests
 - Western coastlines
 - Eastern coastlines
 - Gulf coastlines
 - Pacific Islands
 - Caribbean islands
 - Great Lakes
 - Eastern forests and woodlands
 - Polar-subpolar (Alaska)
 - Desert-arid—Southwest
 - Prairie grasslands and plains
- **Video**
- **Case studies**
- **Activities**
- **educational standards**

- **Climate Literacy guidelines**
- **Glossary**
- **EPA Global Warming**
- **Wheel Card**
- **Fact sheets**
- **Poster titled “Can’t go with the Floe**
- **Poster titled “How Do You Measure Up**